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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/901,317

07/09/2001

Alexandros Biliris

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9040

7590

12/20/2005

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EXAMINER

JEAN GILLES, JUDE

ART UNIT

PAPER NUMBER

2143

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/901,317

Applicant(s)

BILIRIS ET AL.

Examiner

Jude J. Jean-Gilles

Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 3-18,20-22 and 24-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-18,20-22 and 24-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This Action is in regards to the Reply received on 09/16/2005.

#### ***Response to Amendment***

1. This action is responsive to the application filed on 07/09/2001. By this amendment, claims 3-18, 20-22 and 24-28 remain pending. Claims 1, 2, 19 and 23 having been canceled without prejudice or disclaimer, claims 3, 4, 6, 9-18, 20-22 and 24 having been amended and claims 25-28 having been added. Claims 3- 18, 20-22 and 24-28 represent a method and apparatus for a "Method and apparatus for content distribution network brokering and peering."

#### ***Response to Arguments***

2. Applicant's arguments with respect to claims 3-18, 20-22 and 24-28 have been carefully considered, but are not deemed fully persuasive. Applicant's arguments are deemed moot in view of the following new ground of rejection as explained here below, necessitated by Applicant substantial amendment (i.e., a method wherein choosing and redirecting content distribution network is based at least partly on the determination of which of the plurality of content distribution networks is closer to the client ) to the claims which significantly affected the scope thereof.

The dependent claims stand rejected as articulated in the First Office Action and all objections not addressed in Applicant's response are herein reiterated.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3- 18, 20-22 and 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joffe et al (Joffe) U.S. patent No. 6,5185,619, in view of McCanne et al (McCanne)U.S. 6415,323 B1.

**Regarding claim 3:** Joffe teaches the invention substantially as claimed. Joffe teaches a method of serving content in a packet-switched network comprising:

choosing from a plurality of content distribution networks which content distribution network will respond to a content request from a client (*column 10, lines 48-67; column 11, lines 1-14*);

redirecting the client to the chosen content distribution network so that the content request will be served by the chosen content distribution network (*column 13, lines 31-46*), wherein

the content distribution network is chosen based. at least partly, on a determination of which of the plurality of content distribution networks is closer to the client (*column 11, lines 65-67; column 12, lines 1-19*). The applicant argued that Joffe does not teach in detail "the content distribution network is chosen based at least partly,

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on a determination of which of the plurality of content distribution networks is closer to the client", the Examiner finds new reference to reject this limitation in the claim.

In the same field of endeavor, McCanne discloses "One potential problem with the service rendezvous mechanism described above is that a given service node installation may run out of capacity because too many clients are routed to that installation. This may be solved in an embodiment where the redirection system is capable of redirecting client service requests across the wide area in cases of overload. For example, if all of the local service nodes are running at capacity, the redirector can choose a non-local service node and redirect the client accordingly. This redirection decision can in turn be influenced by network and server health measurements. In this approach, the redirector sends period "probe" messages to the candidate servers to measure the network path latency. Since the redirector is typically near the requesting client, these redirector-to-server measurements represent an accurate estimate of the corresponding network path between the client and the candidate server [see McCanne; column 17, lines 25-41].

Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated McCanne's teachings of using determining of which of the plurality of content distribution networks is closer to the client with the teachings of Joffe, for the purpose of increasing tolerance of faults occurring in the underlying hardware and reliability over prior art web servers as stated by Joffe in lines 4-9 of column 4. McCanne also provides motivation to combine by

stating this architecture exploits scalable addressing, adaptive routing, hierarchical naming, decentralized administration, and so forth ..." in lines 35040 of column 4. By this rationale, **claim 3** is rejected.

**Regarding claim 4:** the combination Joffe-McCanne teaches the method of claim 3 wherein the content distribution network is chosen based, at least partly, on a measurement of load on the content distribution networks (see McCanne; column 17, lines 25-41).

**Regarding claim 5:** the combination Joffe-McCanne teaches the method of claim 4 wherein the content distribution network is chosen only if the measured load on the content distribution network does not exceed a predetermined capacity reserved on the content distribution network (see McCanne; column 17, lines 25-41).

**Regarding claim 6:** the combination Joffe-McCanne teaches the method of claim 3, wherein the content to be served by the chosen content distribution network comprises content embedded in a document to be served to the client, and wherein redirecting the client to the chosen content distribution network further comprises rewriting references to the embedded content before serving the document to the client [see *Joffe*, column 13, lines 1-46].

**Regarding claim 7:** The combination Joffe-McCanne teaches the method of claim 6 wherein the reference to the embedded content is rewritten to point to a server in the chosen content distribution network [see *Joffe*, column 13, lines 1-46].

**Regarding claim 8:** The combination Joffe-McCanne teaches the method of claim 6 wherein the reference to the embedded content is rewritten to point to a domain name served by the content distribution network [see *Joffe*, column 10, lines 47-65].

**Regarding claim 9:** The combination Joffe-McCanne teaches teach the method of claim 6 wherein the reference to the embedded content is rewritten so that an original reference may be readily parsed from a corresponding one of the rewritten reference (see *McCanne*; column 8, lines 40-65).

**Regarding claim 10:** The combination Joffe-McCanne teaches the method of claim 9 wherein the chosen content distribution network utilizes the corresponding one of the rewritten references to obtain the embedded content if the chosen content distribution network does not have an up-to-date copy of the embedded content in a cache (see *McCanne*; column 8, lines 40-65).

**Regarding claim 11:** The combination Joffe-McCanne teaches the method of claim 5 wherein the step of redirecting the client to the chosen content distribution network further comprises the step of having domain name system queries resolve to content served by the chosen content distribution network [see *Joffe*, column 10, lines 47-65].

**Regarding claim 12** The combination Joffe-McCanne teaches the method of claim 11 further comprising answering the domain name system queries are answered with a network address of content served by the chosen content distribution network [see *McCanne*; column 9, lines 14-47].

**Regarding claim 13:** The combination Joffe-McCanne teaches the method of claim 11 comprising answering the domain name system queries with a network address of a domain name system server responsible for the chosen content distribution network [see *McCanne*; column 9, lines 14-47].

**Regarding claim 14:** The combination Joffe-McCanne teaches the method of claim 11 comprising answering the domain name system queries are answered with a domain name of content served by the chosen content distribution network[see *McCanne*; column 9, lines 14-47].

**Regarding claim 15:** The combination Joffe-McCanne teaches the method of claim 11 comprising forwarding the domain name system queries to a domain name server responsible for the chosen content distribution network and which directly answers the domain name system queries [see *McCanne*; column 9, lines 14-47].

**Regarding claim 16:** The combination Joffe-McCanne teaches the method of claim 5 wherein the content distribution network serves the content request from a local cache and wherein the content distribution network has access to a second copy of the content if there is a cache miss [see *McCanne*; column 15, lines 1-52].

**Regarding claim 17:** The combination Joffe-McCanne teaches [TABLE  
DRIVEN DISAMBIGUATION] the method of claim 16 wherein the content distribution network has a table of associations between references to content served by the content distribution network and references to a second copy of the content served from elsewhere in the network [see *McCanne*; column 15, lines 1-52].



**Regarding claim 18:** The combination Joffe-McCanne teaches [SEMANTIC MAPPING DISAMBIGUATION] The method of claim 16 wherein the content distribution network can transform references to content served by the content distribution network into second references to a second copy of the content served from elsewhere in the network[see *McCanne*; column 15, lines 1-52].

**Regarding claim 20:** The combination Joffe-McCanne teaches the brokering domain name server of claim 22 wherein the predetermined policy reflects a chosen content distribution network and redirection mechanism for each of a plurality of regions of client network addresses [see *McCanne*; column 10, lines 16-35; column 5, lines 6-14].

**Regarding claim 21:** The combination Joffe-McCanne teaches the brokering domain server of claim 19 wherein the policy module further comprises an interface to information received from the plurality of content distribution networks and wherein the policy module modifies the predetermined policy in response to the information [see *McCanne*; column 17, lines 25-41].

**Regarding claim 22:** The combination Joffe-McCanne teaches a brokering domain server comprising:

a domain name system engine which is capable of answering domain name system queries from a client [see *McCanne*; column 9, lines 14-47].and

a policy module which directs the domain name system engine to answer the domain name system queries in accordance with a predetermined policy which resolves

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a domain name to a-server in a content distribution network chosen from a plurality of content distribution networks [see McCanne; column 17, lines 25-41] wherein:

the policy module further comprises an interface to information received from the plurality of content distribution networks and wherein the policy module modifies the predetermined policy in response to the information [see McCanne; column 17, lines 25-41] and

the information further comprises load information and wherein the predetermined policy reflects capacity reserved on each of the plurality of content distribution networks (see Joffe; *column 5, lines 45-59*).

**Regarding claim 24:** The combination Joffe-McCanne teaches a method of redirecting content requests between content distribution networks (*column 5, lines 38-44*), comprising :

receiving a request for a document which contains one or more embedded content references [see Joffe, *column 13, lines 1-46*];

retrieving the document[see Joffe, *column 13, lines 1-46*];

choosing one out of a plurality of content distribution networks to serve the embedded content [see McCanne; column 17, lines 25-41].

rewriting the document so that the embedded content references point to content stored at the chosen content distribution network [see McCanne; column 17, lines 25-41].and

transmitting the rewritten document (see Joffe; *column 3, lines 22-25*).

**Regarding claim 25:** The combination Joffe-McCanne teaches a system comprising:

means for choosing a content distribution network from a plurality of content distribution networks for responding to a content request from a clients[see *Joffe, column 13, lines 1-46*]; and

means for redirecting the client to the chosen content distribution network so that the content request will be served by the chosen content distribution network (see *Joffe, column 13, lines 31-46*),  
wherein

the means for choosing a content. distribution network from a plurality of content distribution networks for responding to a content request from a client is configured to choose a content distribution network only if a measured load of the content distribution network does not exceed a predetermined capacity reserved on the content distribution network [see *McCanne; column 17, lines 25-41*].

**Regarding claim 26:** The combination Joffe-McCanne teaches the system of claim 25. wherein:

the content to be served by the chosen distribution network comprises content embedded in a document to be served to the clients [see *Joffe, column 13, lines 1-46*];  
and

the means for redirecting the client to the chosen content distribution network so that the content request will lx served by the chosen content distribution network (see *Joffe; column 13, lines 31-46*),

further comprises:

means for rewriting references to the embedded content before serving the document to the client [see *McCanne*; column 17, lines 25-41].

**Regarding claim 27:** The combination Joffe-McCanne teaches the system of claim 25, further comprising:

means for serving content from a local cache (see *McCanne*; column 8, lines 40-65); and

means for serving content from a second copy of the content when the means for serving content from a local cache experiences a cache miss (see *McCanne*; column 8, lines 40-65)..

**Regarding claim 28:** The combination Joffe-McCanne teaches the system of claim 27, further comprising:

means for transforming references to content served by the content distribution network into second references to the second copy of the content served from elsewhere in the network [see *McCanne*; column 15, lines 1-52].

### ***Response to Arguments***

5. Applicant's Request for Reconsideration filed on 09/16/2005 has been carefully considered but is not deemed fully persuasive. Applicant's arguments with respect to claims 3-18, 20-22 and 24-28 have been carefully considered, but are not deemed fully persuasive. Applicant's arguments are deemed moot in view of the new ground of

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rejection articulated above. However, because there exists the likelihood of future presentation of these arguments, the Examiner thinks that it is prudent to address Applicants' main points of contention.

A. Applicants submit that the Examiner equates determining a "best" route based on a route having a fastest ICMP routing time with determining which of a plurality of content distribution networks is closer to the client and Applicants disagree with the Examiner.

B. For at least the reasons discussed in point A, Applicants submit that Joffe and Logan do not disclose or suggest each and every feature of claim 3 and respectfully request that the rejection of claim 3-18, and 19-21 be withdrawn.

6. As to "Point A" the Examiner uses new reference (McCanne) in combination with Joffe to reject Claim 3. Note that in the rejection of claim 3, McCanne discloses "One potential problem with the service rendezvous mechanism described above is that a given service node installation may run out of capacity because too many clients are routed to that installation. This may be solved in an embodiment where the redirection system is capable of redirecting client service requests across the wide area in cases of overload. For example, if all of the local service nodes are running at capacity, the redirector can choose a non-local service node and redirect the client accordingly. This redirection decision can in turn be influenced by network and server health measurements. In this approach, the redirector sends period "probe" messages to the candidate servers to measure the network path latency. Since the

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redirector is typically near the requesting client, these redirector-to-server measurements represent an accurate estimate of the corresponding network path between the client and the candidate server [see McCanne; column 17, lines 25-41].

As to "Point B", it is also the Examiner's position that the new combination of Joffe-McCanne reads on all the limitations of the claims and that theis application as presented is not in condition for allowance [see rejection of claims 3-18, 20-22 and 24-28.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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8. Any inquiry concerning this communication or earlier communications from examiner should be directed to Jude Jean-Gilles whose telephone number is (571) 272-3914. The examiner can normally be reached on Monday-Thursday and every other Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley, can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3719.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Jude Jean-Gilles

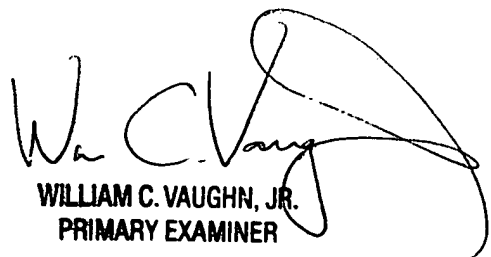
Patent Examiner

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JJG



December 12, 2005



WILLIAM C. VAUGHN, JR.  
PRIMARY EXAMINER